

Claims

1. A photoconductor (102, 202) for conducting light, **characterized** in that to a surface of the photoconductor (102, 202), there is induced electroconductive material (110, 210), which material is connectable to a ground plane in order to
5 conduct electrostatic discharges through the electroconductive material (110, 210) of the photoconductor (102, 202) to the ground plane.
2. A photoconductor (102, 202) according to claim 1, **characterized** in that the photoconductor (102, 202) is provided with an aperture (109, 209), and that the photoconductor (102, 202) is provided with electroconductive material at least
10 around the edges of the aperture (109, 209).
3. A photoconductor (102, 202) according to claim 1, **characterized** in that in the photoconductor (202), there is integrated a layer of electroconductive material (210) that covers the whole surface of the photoconductor (202).
4. A photoconductor (102, 202) according to claim 3, **characterized** in that in
15 the photoconductor (202), there is integrated a layer of electroconductive material (210) for conducting light in the photoconductor (202) and for shielding the light source (208) against electrostatic pulses.
5. A photoconductor (102, 202) according to any of the preceding claims, **characterized** in that the electroconductive material (110, 210) is metal and it is
20 connectable to the ground plane through the electroconductive material (111).
6. A photoconductor (102, 202) according to any of the preceding claims, **characterized** in that the electroconductive material (110, 210) is realized on the surface of the photoconductor (102, 202) by means of an electroconductive film, or by inducing chemically or electrochemically.
- 25 7. An apparatus for shielding a component against electrostatic discharge, said apparatus comprising a light emitting diode (108, 208) and a photoconductor layer (102, 202) for conducting the light emitted by the light emitting diode (108, 208), **characterized** in that the photoconductor layer (102, 202) includes electroconductive material (110, 210), and that the electroconductive material is
30 connectable to the ground plane (111) in order to conduct electrostatic discharges from the photoconductor layer (102, 202) to the ground plane.

8. An apparatus according to claim 7, **characterized** in that the photoconductor layer (102, 202) is provided with an aperture (109, 209), so that the light emitting diode (108, 208) is at least partly placed in the aperture (109, 209), inside the photoconductor layer (102, 202), and that the photoconductor layer (102, 202) is provided with electroconductive material at least around the edges of the aperture (109, 209).

9. An apparatus according to claim 7, **characterized** in that in the photoconductor layer (202), in the surface thereof, there is integrated a layer of electroconductive material (210), said layer covering the whole surface of the photoconductor layer (202).

10. An apparatus according to claim 9, **characterized** in that in the photoconductor layer (202), there is integrated a layer of electroconductive material (210) for shielding the components against electrostatic pulses and for conducting the light emitted by the light emitting diode (208) in the photoconductor layer (202).

11. An apparatus according to any of the preceding claims, **characterized** in that the light emitting diode (108, 208) is placed on a printed circuit board (103, 203), the photoconductor layer (102, 202) is placed on the component side of the circuit board (103, 203), and the electroconductive material (110, 210) is placed on that side of the photoconductor layer (102, 202) that faces away from the circuit board (103, 203) and the electroconductive material (110, 210) is connectable to the ground plane of the circuit board (103, 203).

12. An apparatus according to any of the preceding claims, **characterized** in that the electroconductive material (110, 210) is metal, and that it is connected to the ground plane by electroconductive material (111).

13. An apparatus according to any of the preceding claims, **characterized** in that the electroconductive material (110, 210) is realized on the surface of the photoconductor layer (102, 202) by means of electroconductive film, or by inducing chemically or electrochemically.

14. An apparatus according to any of the preceding claims, **characterized** in that on the circuit board (103, 203), there is a light emitting diode (108, 208) for illuminating the keypad (101, 201), and that the device comprises a photoconductor layer (102, 202) for conducting the light emitted by the light emitting diode (108, 208) to a key (104, 204).

15. A method for shielding a light emitting diode (103, 203), placed on a printed circuit board (108, 208), against electrostatic discharges, in which method on the component side of the circuit board (103, 203) there is arranged a photoconductor layer (102, 202), **characterized** in that in the photoconductor layer (102, 202),
5 there is induced electroconductive material (110, 210), and that the electroconductive material is connected to the ground plane (111) of the circuit board in order to conduct electrostatic discharges from the photoconductor layer (102, 202) to the ground plane of the circuit board (103, 203).

16. A method according to claim 15, **characterized** in that the photoconductor
10 layer (102, 202) is provided with an aperture (109, 209), so that the light emitting diode (108, 208) placed on the circuit board (103, 203) is arranged at least partly in the aperture (109, 209), inside the photoconductor layer (102, 202), and that in the photoconductor layer (102, 202), there is induced electroconductive material (110, 210) at least around the edges of the aperture (109, 209).

15 17. A method according to claim 15, **characterized** in that on the outermost surface of the photoconductor layer (202), facing away from the circuit board, there is integrated a layer of electroconductive material (210), which layer covers the whole surface of the photoconductor layer.

18. A method according to claim 17, **characterized** in that the electroconductive
20 material (210) is induced for shielding the components of the circuit board (203) against electrostatic pulses and for conducting the light emitted by the light emitting diode (208) of the circuit board (203) in the photoconductor layer (202).

19. A method according to any of the preceding claims, **characterized** in that the
25 electroconductive material (110, 210) is metallized to the photoconductor layer (102, 202) and connected to the ground plane (111) of the circuit board by electroconductive material.

20. A method according to any of the preceding claims, **characterized** in that the
30 electroconductive material (110, 210) is realized in the photoconductor layer (102, 202) by means of electroconductive film, or by inducing chemically or electrochemically.